

FRIGA-BOHN®

BORA

Cubic unit cooler
Commercial and semi-industrial range

WG HFC



|||| 0.8 - 33 kW



Easy maintenance and installation:

- Quick access to all components.
- Simple and intuitive electrical connection thanks to Wago terminals and cable identification.
- Fans equipped with an external electrical box.

The optimized coil design and high-efficiency motors enable improved **energy efficiency**.

The complete redesign of the defrost system delivers significant improvements that not only enhance efficiency and reliability, but also simplify maintenance and **reduce energy consumption by up to 30%**.

CASING

- # Easy to clean: galvanized sheet steel, fully pre-painted white.
- # Pivoting, hinged drain pan with rounded corners, made from pre-painted aluminium, eliminating retention zones and ensuring complete safety through the absence of sharp corners.



COILS

- # Made from aluminium fins with 4 or 6 mm spacing, combined with copper tubes with a grooved internal structure, the coils are very efficient and compact.
- # Versions available:
 - Multi-refrigerant HFCs,
 - WCO (glycol water, coolant).

“
Select your coil treatment to extend your unit cooler's lifespan!
 Contact us.
 ”

VENTILATION

Long-lubricated, factory-wired axial motor fans:

	models	voltage	freq.	IP	class
Ø 315 mm 4P - 1390 rpm	BORA 3XXX	230V/1	50/60Hz	54	F
Ø 450 mm* 4P - 1280 rpm	BORA 4XXX	230-400V/3	50/60Hz	54	F

* Dual-voltage fan motors, wired in 400V by default.



DEFROST

- # Two defrosting modes for the coil: electric (230V/1 or 400V/3) and hot gas.
- # Rapid defrosting of the condensate drain pan thanks to a heating element mounted beneath the intermediate drip tray.
- # Use of bent heating elements to ensure effective defrosting of the expansion valve, distributor, and manifold.
- # Addition of fixing points to guarantee correct repositioning of the electric heating elements, thereby reducing the risk of failure.
- # Color coding for easy identification of the heating elements' electrical connections.

OPTIONS

- HG1** Hot gases (coil: hot gases, drain pan: electric heaters).
- 2TH** Defrost and safety thermostats (5709L + 5708L). **KIT TO INSTALL**
- THD** Defrost thermostat (5709L). **KIT TO INSTALL**
- THS** Safety thermostat (5708L). **KIT TO INSTALL**
- E1U** Light electric defrost.
- E1K** Light electric defrost. **KIT TO INSTALL**
- E3K** Full electric defrost. **KIT TO INSTALL**

	+10	+2	-5	-10	-25°C
tA1	BORA .. R/L	+E1K / E1U		+E3K	
				BORA .. E/C	

BORA 3^(A) 1^(B) 52^(C) -R^(D)

- (A) Fan diameter: **3** = Ø 315 mm - **4** = Ø 450 mm
- (3) Number of fans
- (C) Model
- (D) Fin spacing: **R** = 4 mm (positive) **E** = 4 mm (negative)
L = 6 mm (positive) **C** = 6 mm (negative)

The BORA is available with HFCs and glycol water. For more information, please consult our software.

BORA (1/2)

 4 mm

CONDITIONS	REFRIGERANTS	BORA ... -R
SC2 (1)	R449A	kW
	R404A	kW

3152	3153	3154	3155	3156	3243	3244	3245	3343	3344
1,8	2,53	3,11	3,45	3,67	4,43	5,48	5,96	7	8,04
2	2,62	3,22	3,38	3,5	4,53	5,55	5,89	7	8,11

CONDITIONS	REFRIGERANTS	BORA ... -E
SC3 (1)	R449A	kW
	R404A	kW
SC4 (1)	R449A	kW
	R404A	kW

3152	3153	3154	3155	3156	3243	3244	3245	3343	3344
1,23	1,75	2,2	2,41	2,67	3,07	3,85	4,24	4,86	5,72
1,48	1,9	2,4	2,6	2,75	3,27	4,2	4,51	5,43	5,98
0,9	1,3	1,65	1,83	2,04	2,27	2,9	3,22	3,63	4,3
1,13	1,46	1,86	2,03	2,15	2,5	3,26	3,51	4,21	4,62

Surface area			m ²
Circuit volume			dm ³
Airflow			m ³ /h
Air throw (2)			m
		Nb	
		Ø	
Fan 1,350 rpm	230V/1/50Hz	W max	
		A max (3)	
	230-400V/3/50Hz	W max	
		A max (3)	
BORA ... -R		Nb	
Electric defrost		W Total	
EIK (4)	230V/1/50Hz	A Total	
	400V/3/50Hz	A Total	
BORA ... -E		Nb	
Coil + Drain pan		W Total	
Electric defrost standard		A Total	
230V/1/50Hz		A Total	
400V/3/50Hz		A Total	
Connections HFCs	Inlet (5)	Ø ODF	
	Outlet (5)	Ø OD	
Net weight			kg

3152	3153	3154	3155	3156	3243	3244	3245	3343	3344
5,1	7,7	10,3	12,8	15,4	12,3	16,4	20,5	18,5	24,6
0,8	1,3	1,7	2,1	2,5	2,0	2,7	3,3	3,0	4
1850	1760	1660	1580	1500	3260	3030	2830	4900	4540
17	16	15	14	13	17	15	15	21	19
1	1	1	1	1	2	2	2	3	3
315	315	315	315	315	315	315	315	315	315
105	105	105	105	105	210	210	210	315	315
0,45	0,45	0,45	0,45	0,45	0,9	0,9	0,9	1,35	1,35
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
1+1	1+1	2+1	2+1	2+1	2+1	2+1	3+1	2+1	2+1
860	860	1290	1290	1290	1545	-	2060	2310	2310
3,74	3,74	5,61	5,61	5,61	6,72	6,72	8,96	10,04	10,04
-	-	-	-	-	-	-	-	-	-
1+1	2+1	3+1	3+1	4+1	2+1	3+1	4+1	2+1	3+1
860	1290	1720	1720	2150	1545	2060	2575	2310	3080
3,74	5,61	7,48	7,48	9,35	6,72	8,96	11,2	10,04	13,39
-	-	-	-	-	-	-	-	-	-
D 1/2" - 12mm	D 5/8" *								
10mm	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"
19	20	22	22	23	28	31	32	41	43

(1) Standard conditions:
 SC2 / 0 °C (air inlet temperature) / -8 °C (evaporation temperature) / DTM = 8 K
 SC3 / -18 °C (air inlet temperature) / -25 °C (evaporation temperature) / DTM = 7 K
 SC4 / -25 °C (air inlet temperature) / -31 °C (evaporation temperature) / DTM = 6 K
 (2) Residual air velocity: 0.25 m/s.
 (3) Overload protection settings. For air temperatures "ti" other than +20 °C, multiply the current values by the ratio 293 / (273 + "ti") in order to obtain the approximate current value after the cold room has reached operating temperature.
 (4) Electric defrost option.
 (5) OD: male connection – ODF: female connection to receive a tube of the same diameter.* Male inlet connection

R404A is a refrigerant available only for markets outside the EU (not compliant with the F-Gas regulation).

BORA 3^(A)3^(B)45^(C)-R^(D)

- (A) Fan diameter: **3** = Ø 315 mm - **4** = Ø 450 mm
- (3) Number of fans
- (C) Model
- (D) Fin spacing: **R** = 4 mm (positive) **E** = 4 mm (negative)
L = 6 mm (positive) **C** = 6 mm (negative)

The BORA is available with HFCs and glycol water. For more information, please consult our software.

BORA (2/2)

 4 mm

CONDITIONS	REFRIGERANTS	BORA ... -R	3345	4263	3444	3445	4264	4266	4364	4366	4466
SC2 (1)	R449A	kW	9,07	10,55	10,81	12,18	12,78	16,47	19,34	24,59	32,91
	R404A	kW	8,67	11,3	10,9	11,99	13,46	15,77	20,34	23,83	32,35
CONDITIONS	REFRIGERANTS	BORA ... -E	3345	4263	3444	3445	4264	4266	4364	4366	4466
SC3 (1)	R449A	kW	6,37	7,44	7,71	8,79	9,13	11,61	13,91	17,65	24
	R404A	kW	6,31	8,4	8,24	9,02	10,1	12,37	15,31	18,73	24,52
SC4 (1)	R449A	kW	4,79	5,58	5,86	6,69	6,9	8,88	10,53	13,53	18,38
	R404A	kW	4,85	6,49	6,41	7,03	7,85	9,73	11,93	14,74	19,21
			3345	4263	3444	3445	4264	4266	4364	4366	4466
Surface area		m ²	30,8	27,7	32,8	41,1	37,0	55,4	55,4	83,1	110,9
Circuit volume		dm ³	5	4,5	5,4	6,7	6,0	9,0	9,0	13,5	18,1
Airflow		m ³ /h	4240	8250	6060	5660	7800	7080	11700	10610	14150
Air throw (2)		m	18	25	23	22	24	22	28	26	29
		Nb	3	2	4	4	2	2	3	3	4
		Ø	315	450	315	315	450	450	450	450	450
Fan 1,350 rpm	230V/1/50Hz	W max	315	-	420	420	-	-	-	-	-
		A max (3)	1,35	-	1,8	1,8	-	-	-	-	-
	230-400V/3/50Hz	W max	-	700	-	-	700	700	1050	1050	1400
		A max (3)	-	1,28	-	-	1,28	1,28	1,92	1,92	2,56
		Nb	3+1	2+1	2+1	3+1	3+1	4+1	3+1	4+1	4+1
BORA ... -R		W Total	3080	2640	2940	3920	3520	4400	5280	6600	8800
Electric defrost EIK (4)	230V/1/50Hz	A Total	13,39	11,48	12,78	17,04	15,3	6,35	7,62	9,53	12,7
	400V/3/50Hz	A Total	-	11,48	-	-	15,3	6,35	7,62	9,53	12,7
BORA ... -E	Coil + Drain pan	Nb	4 + 1	3 + 1	3 + 1	4 + 1	4 + 1	6 + 1	4 + 1	6 + 1	6 + 1
		W Total	3850	3520	3920	4900	4400	6160	6600	9240	12320
Electric defrost standard	230V/1/50Hz	A Total	-	15,3	-	-	-	-	-	-	-
	400V/3/50Hz	A Total	5,56	-	5,66	7,07	6,35	8,89	9,53	13,34	17,78
Connections HFCs	Inlet (5)	Ø ODF	D 5/8" *	D 7/8" *	D 5/8" *	D 7/8" *	D 1"1/8" *	D 1"1/8" *	D 1"1/8" *	D 1"1/8" *	D 1"3/8" *
	Outlet (5)	Ø OD	7/8"	1"3/8	7/8"	1"1/8	1"3/8	1"3/8	1"5/8	1"5/8	2"1/8
Net weight		kg	45	58	54	37	62	69	84	95	107

(1) Standard conditions:

SC2 / 0 °C (air inlet temperature) / -8 °C (evaporation temperature) / DTM = 8 K

SC3 / -18 °C (air inlet temperature) / -25 °C (evaporation temperature) / DTM = 7 K

SC4 / -25 °C (air inlet temperature) / -31 °C (evaporation temperature) / DTM = 6 K

(2) Residual air velocity: 0.25 m/s.

(3) Overload protection settings. For air temperatures "ti" other than +20 °C, multiply the current values by the ratio 293 / (273 + "ti") in order to obtain the approximate current value after the cold room has reached operating temperature.

(4) Electric defrost option.

(5) OD: male connection – ODF: female connection to receive a tube of the same diameter.* Male inlet connection

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BORA 3^(A)3^(B)52^(C)-L^(D)

- (A) Fan diameter: **3** = Ø 315 mm - **4** = Ø 450 mm
- (3) Number of fans
- (C) Model
- (D) Fin spacing: **R** = 4 mm (positive) **E** = 4 mm (negative)
L = 6 mm (positive) **C** = 6 mm (negative)

The BORA is available with HFCs and glycol water. For more information, please consult our software.

BORA (1/2)

 6 mm

CONDITIONS	REFRIGERANTS	BORA ... -L	3152	3153	3154	3155	3156	3243	3244	3245	3343
SC2 (1)	R449A	kW	1,56	2,15	2,76	3,04	3,39	3,79	4,79	5,3	5,99
	R404A	kW	1,58	2,27	2,75	3,1	3,29	3,97	4,95	5,4	6,15
CONDITIONS	REFRIGERANTS	BORA ... -C	3152	3153	3154	3155	3156	3243	3244	3245	3343
SC3 (1)	R449A	kW	1,05	1,5	1,93	2,19	2,42	2,66	3,41	3,78	4,17
	R404A	kW	1,12	1,67	2,14	2,31	2,57	2,9	3,67	4,12	4,73
SC4 (1)	R449A	kW	0,77	1,13	1,45	1,65	1,85	2	2,57	2,89	3,16
	R404A	kW	0,84	1,29	1,66	1,8	2,01	2,24	2,84	3,24	3,69
			3152	3153	3154	3155	3156	3243	3244	3245	3343
Surface area		m ²	3,5	5,3	7,1	8,9	10,6	8,5	11,4	14,2	12,8
Circuit volume		dm ³	0,8	1,3	1,7	2,1	2,5	2,0	2,7	3,3	3,0
Airflow		m ³ /h	1900	1820	1750	1680	1610	3450	3250	3070	5180
Air throw (2)		m	17	17	16	15	14	18	17	16	22
		Nb	1	1	1	1	1	2	2	2	3
		Ø	315	315	315	315	315	315	315	315	315
Fan 1,350 rpm	230V/1/50Hz	W max	105	105	105	105	105	210	210	210	315
		A max (3)	0,45	0,45	0,45	0,45	0,45	0,9	0,9	0,9	1,35
	230-400V/3/50Hz	W max	-	-	-	-	-	-	-	-	-
		A max (3)	-	-	-	-	-	-	-	-	-
		Nb	1+1	1+1	2+1	2+1	2+1	1+1	2+1	3+1	1+1
BORA ... -L		W Total	860	860	1290	1290	1290	1030		2060	1540
Electric defrost EIK (4)	230V/1/50Hz	A Total	3,74	3,74	5,61	5,61	5,61	4,48	6,72	8,96	6,7
		A Total	-	-	-	-	-	-	-	-	-
	Coil + Drain pan	Nb	1 + 1	2 + 1	2 + 1	3 + 1	4 + 1	2 + 1	3 + 1	4 + 1	2 + 1
BORA ... -C		W Total	860	1290	1290	1720	2150	1545	2060	2575	2310
Standard electric defrost	230V/1/50Hz	A Total	3,74	5,61	5,61	7,48	9,35	6,72	8,96	11,2	10,04
		A Total	-	-	-	-	-	-	-	-	-
Connections HFCs	Inlet (5)	Ø ODF	1/2" - 12mm	D 5/8" *	D 5/8" *	D 5/8" *	D 5/8" *				
	Outlet (5)	Ø OD	10mm	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"
Net weight		kg	19	20	21	21	22	28	29	30	39

(1) Standard conditions:
 SC2 / 0 °C (air inlet temperature) / -8 °C (evaporation temperature) / DTM = 8 K
 SC3 / -18 °C (air inlet temperature) / -25 °C (evaporation temperature) / DTM = 7 K
 SC4 / -25 °C (air inlet temperature) / -31 °C (evaporation temperature) / DTM = 6 K
 (2) Residual air velocity: 0.25 m/s.
 (3) Overload protection settings. For air temperatures "ti" other than +20 °C, multiply the current values by the ratio 293 / (273 + "ti") in order to obtain the approximate current value after the cold room has reached operating temperature.
 (4) Electric defrost option.
 (5) OD: male connection – ODF: female connection to receive a tube of the same diameter.* Male inlet connection

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BORA 3^(A)3^(B)44^(C)-L^(D)

- (A) Fan diameter: **3** = Ø 315 mm - **4** = Ø 450 mm
- (3) Number of fans
- (C) Model
- (D) Fin spacing: **R** = 4 mm (positive) **E** = 4 mm (negative)
L = 6 mm (positive) **C** = 6 mm (negative)

The BORA is available with HFCs and glycol water. For more information, please consult our software.

BORA (2/2)

6 mm

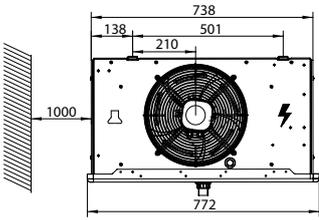
CONDITIONS	REFRIGERANTS	BORA ... -L	3344	3345	3444	3445	4264	4266	4364	4366	4466
SC2 (1)	R449A	kW	7,03	8,11	9,45	10,82	11,32	14,71	17,27	22,27	29,65
	R404A	kW	7,27	8,02	9,74	10,99	11,72	14,58	17,53	22,11	29,81
CONDITIONS	REFRIGERANTS	BORA ... -C	3344	3345	3444	3445	4264	4266	4364	4366	4466
SC3 (1)	R449A	kW	5,04	5,78	6,78	7,88	7,93	10,4	12,06	16,11	21,64
	R404A	kW	5,42	5,9	7,39	8,32	8,92	11,34	13,51	16,59	22,66
SC4 (1)	R449A	kW	3,83	4,35	5,17	6,02	6,03	7,97	9,19	12,3	16,63
	R404A	kW	4,21	4,55	5,77	6,51	6,97	8,92	10,58	12,91	17,77
			3344	3345	3444	3445	4264	4266	4364	4366	4466
Surface area		m ²	17	21,3	22,7	28,4	25,5	38,3	38,3	57,5	76,6
Circuit volume		dm ³	4	5	5,4	6,7	6,0	9,0	9,0	13,5	18,1
Airflow		m ³ /h	4880	4600	6500	6140	8220	7560	12330	11340	15110
Air throw (2)		m	21	19	24	23	25	24	29	27	30
		Nb	3	3	4	4	2	2	3	3	4
		Ø	315	315	315	315	450	450	450	450	450
Fan 1,350 rpm	230V/1/50Hz	W max	315	315	420	420	-	-	-	-	-
		A max (3)	1,35	1,35	1,8	1,8	-	-	-	-	-
	230-400V/3/50Hz	W max	-	-	-	-	700	700	1050	1050	1400
		A max (3)	-	-	-	-	1,28	1,28	1,92	1,92	2,56
		Nb	2+1	3+1	2+1	3+1	3+1	4+1	3+1	4+1	4+1
BORA ... -L		W Total	2310	3080	2940	3920	3520	4400	5280	6600	8800
Electric defrost EIK (4)	230V/1/50Hz	A Total	10,04	13,39	12,78	17,04	15,3	6,35	7,62	9,53	12,7
		A Total	-	-	-	-	15,3	6,35	7,62	9,53	12,7
	Coil + Drain pan	Nb	3 + 1	4 + 1	3 + 1	4 + 1	4 + 1	6 + 1	4 + 1	6 + 1	6 + 1
BORA ... -C		W Total	3080	3850	3920	4900	4400	6160	6600	9240	12320
Standard electric defrost	230V/1/50Hz	A Total	13,39	-	-	-	-	-	-	-	-
		A Total	-	5,56	5,66	7,07	6,35	8,89	9,53	13,34	17,78
Connections	Inlet (5)	Ø ODF	D 5/8" *	D 5/8" *	D 5/8" *	D 7/8" *	D 1 1/8" *	D 1 3/8" *			
HFCs	Outlet (5)	Ø OD	7/8"	7/8"	7/8"	1 1/8"	1 3/8"	1 3/8"	1 5/8"	1 5/8"	2 1/8"
Net weight		kg	41	43	52	37	59	65	81	90	100

(1) Standard conditions:
 SC2 / 0 °C (air inlet temperature) / -8 °C (evaporation temperature) / DTM = 8 K
 SC3 / -18 °C (air inlet temperature) / -25 °C (evaporation temperature) / DTM = 7 K
 SC4 / -25 °C (air inlet temperature) / -31 °C (evaporation temperature) / DTM = 6 K
 (2) Residual air velocity: 0.25 m/s.
 (3) Overload protection settings. For air temperatures "ti" other than +20 °C, multiply the current values by the ratio 293 / (273 + "ti") in order to obtain the approximate current value after the cold room has reached operating temperature.
 (4) Electric defrost option.
 (5) OD: male connection – ODF: female connection to receive a tube of the same diameter.* Male inlet connection

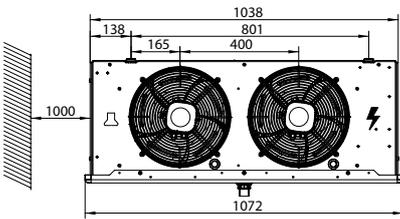
R404A is a refrigerant available only for markets outside the EU (not compliant with the F-Gas regulation).

BORA | Ø 315 mm

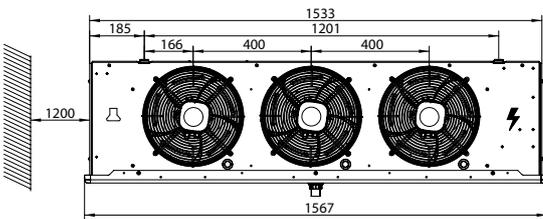
BORA 315 ..



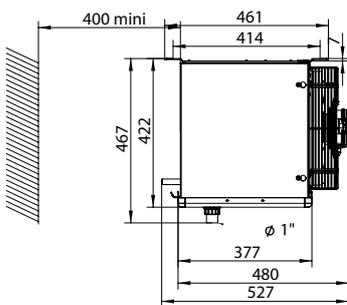
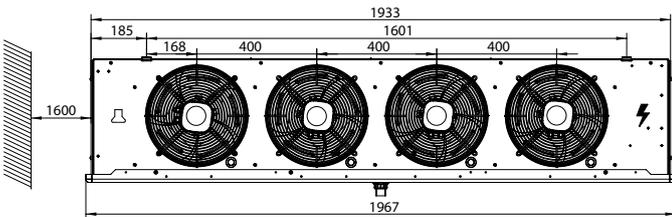
BORA 324 ..



BORA 334 ..

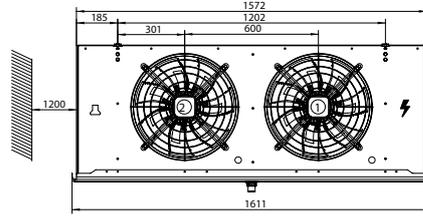


BORA 344 ..

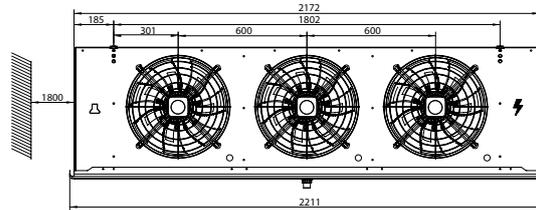


BORA | Ø 450 mm

BORA 426 ..



BORA 436 ..



BORA 446 ..

